

REMARKS

In the Office Action dated January 12, 2005, claims 13 and 14 were rejected under 35 U.S.C. § 112 because the limitation of "said light source" allegedly does not have sufficient antecedent basis. In addition, claims 1, 2, 4-9, 11-16 and 18-20 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,501,091 B1 ("Bawendi et al."). Furthermore, claims 1-3, 5-10, 12-17, 19 and 20 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent Application No. US 2003/0008431 A1 ("Matsubara et al.").

With respect to the § 112 rejections, Applicants have amended claims 13 and 14 by replacing the limitation of "said light source" to the limitation of "said semiconductor die", which has proper antecedent basis. With respect to the § 102 rejections, Applicants have amended the independent claims 1, 8 and 15 to more clearly distinguish the claimed invention from the cited references. Claims 3, 5-7, 10 and 17 have also been amended. As set forth below, the amended independent claims 1, 8 and 15 are not anticipated by the cited references of Bawendi et al. and Matsubara et al. Furthermore, the dependent claims 3, 10 and 17, as well as the other pending dependent claims, are also not anticipated by the cited references of Bawendi et al. and Matsubara et al. In view of these claim amendments and the following remarks, Applicants respectively assert that the pending claims 1-20 are in condition for allowance.

A. Patentability of Amended Independent Claims 1, 8 and 15

The original independent claims 1, 8 and 15 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by the cited references of Bawendi et al. and Matsubara et al. In response, Applicants have amended the independent claims 1, 8 and 15 to more clearly distinguish the claimed invention from the cited references. As amended, Applicants respectfully assert that each recited element of the independent claims 1, 8 and 15 is not disclosed in the cited reference of Bawendi et al. or in the cited reference of Matsubara et al. Consequently, the amended independent claims 1, 8 and 15 are not anticipated by the cited references of Bawendi et al. and Matsubara et al., and thus, should be allowed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. As amended, the independent claim 1 recites in part “a semiconductor chip” and “a wavelength-shifting region” that includes “Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver.” Similarly, the independent claim 8 recites in part “a semiconductor die” and “a phosphor-containing medium” that includes “Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver.” The cited references of Bawendi et al. and Matsubara et al. do not disclose each of these recited elements of the amended independent claims 1 and 8.

As correctly stated in the Office Action, the cited reference of Bawendi et al. does disclose quantum dots of CdSe or ZnSe. However, Bawendi et al. does not disclose “a wavelength-shifting region” or “a phosphor-containing medium” that includes “Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver,” as recited in the amended independent claims 1 and 8. Thus, the amended independent claims 1 and 8 are not anticipated by the cited reference of Bawendi et al.

As for the cited reference of Matsubara et al., this reference does not disclose “a semiconductor chip” or “a semiconductor die” AND “a wavelength-shifting region” or “a phosphor-containing medium” that includes “Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver,” as recited in the amended independent claims 1 and 8. The Office Action asserts that the epitaxial light emission structure 2 shown in Fig. 1 of Matsubara et al. is an LED. Applicants respectfully disagree. The epitaxial light structure 2 is part of an LED 5, which includes both the epitaxial light structure 2 and the ZnSe substrate 1, as illustrated in Fig. 1. Consequently, the epitaxial light structure 2 of Matsubara et al. is not “a semiconductor chip” or “a semiconductor die,” as recited in the amended independent claims 1 and 8. Thus, the amended independent claims 1 and 8 are also not anticipated by the cited reference of

Matsubara et al. Since the amended independent claims 1 and 8 are not anticipated by Bawendi et al. or Matsubara et al., Applicants respectfully request that these claims be allowed.

5 As amended, the independent claim 15 recites in part *"generating first light of a first peak wavelength in a 481-520 nm range at a semiconductor die, including emitting said first light out of said semiconductor die" and "receiving said first light emitted out of said semiconductor die, including converting some of said first light to second light of a second peak wavelength in a red wavelength range using Group IIB*
10 *element Selenide-based phosphor material, said Group IIB element Selenide-based phosphor material including Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver."* As stated above, the cited reference of Bawendi et al. does not disclose *"a wavelength-shifting region" or "a phosphor-containing medium"* that includes
15 *"Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver."* Thus, Bawendi et al. also does not disclose *"converting some of said first light to second light of a second peak wavelength in a red wavelength range using Group IIB element Selenide-based phosphor material, said Group IIB element Selenide-based phosphor material*
20 *including Group IIB element Selenide activated by at least one element selected from a group consisting of Copper, Chlorine, Fluorine, Bromine and Silver,"* as recited in the amended independent claim 15. Thus, the amended independent claim 15 is not anticipated by the cited reference of Bawendi et al. As for the cited reference of Matsubara et al., this reference does not disclose *"receiving said first light emitted out*
25 *of said semiconductor die, including converting some of said first light to second light of a second peak wavelength in a red wavelength range using Group IIB element Selenide-based phosphor material,"* as recited in the amended independent claim 15. Thus, the amended independent claim 15 is not anticipated by the cited reference of Matsubara et al. Since the amended independent claim 15 is not anticipated by
30 Bawendi et al. or Matsubara et al., Applicants respectfully request that this claim be allowed.

B. Patentability of Amended Dependent Claims 3, 10 and 17

As amended, each of the dependent claims 3, 10 and 17 recites a limitation of
"wherein said Group IIB element Selenide-based phosphor material includes said
5 Zinc Selenide activated by Copper." The cited references of Bawendi et al. and
Matsubara et al. do not disclose "Zinc Selenide activated by Copper," as recited in the
amended dependent claims 3, 10 and 17. Thus, the amended dependent claims 3, 10
and 17 are not anticipated by the cited references of Bawendi et al. and Matsubara et
al. As such, Applicants respectfully request that the amended dependent claims 3, 10
10 and 17 be allowed.

C. Patentability of Dependent Claims 2, 4-7, 9, 11-14, 16 and 18-20

Each of the dependent claims 2, 4-7, 9, 11-14, 16 and 18-20 depends on one of
15 the amended independent claims 1, 8 and 15. As such, these dependent claims
include all the limitations of their respective base claims. Therefore, Applicants
submit that these dependent claims are allowable for at least the same reasons as their
respective base claims.


20 Applicants respectfully request reconsideration of the claims in view of the
remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

Chua et al.

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By: 
Thomas H. Ham
Registration No. 43,654
Telephone: (925) 249-1300

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